DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER - WADE PARK

10701 EAST BLVD. CLEVELAND, OH. 44106

Provide Process Loop Tie-Ins

PROJECT NO. 541-15-203

Veterans Administration Medical Center



CODE INFORMATION:

DESIGN CODES: 2012 Life Safety Code, 2012 IBC OCCUPANCY,USE GROUP: Health Care, I-2

TRAVEL DISTANCES: (LSC 18.2.6)

Room Remote Point to Exit: 200'

Exit Access door to Exit: 150'

TYPE OF CONSTRUCTION: (LSC A.8.2.1.2)

Type 1 - 332
STRUCTURAL COLUMNS: (LSC A.8.2.1.2)
3 Hours - Supporting more than 1 floor
2 Hours - Supporting one floor only
2 Hours - Supporting roof only

FLOOR - CEILING ASSEMBLIES: (LSC A.8.2.1.2)
2 Hours
ROOF - CEILING ASSEMBLIES: (LSC A.8.2.1.2)

1 $\frac{1}{2}$ Hours EXTERIOR BEARING WALLS: (LSC A.8.2.1.2)

3 Hours
INTERIOR BEARING WALLS: (LSC A.8.2.1.2)

3 Hours
INTERIOR NONBEARING WALLS: (LSC A.8.2.1.2)
0 Hour

EXIT ENCLOSURES (LSC 7.1.3.2.1)
Existing: 1 Hour

SHAFT ENCLOSURES (LSC 8.6.5)
4 Stories or more: 2 Hours
Less than 4 stories: 1 Hour
SMOKE BARRIERS: (LSC 18.3.7.4)

EXIT ACCESS CORRIDORS: (LSC 8.3.6.2.2)

0 Hour, Smoke Partitions

SUITE WALLS: (18.2.5.6.1.2)

0 Hour, Smoke Partitions
HAZARDOUS AREA PROTECTION (LSC 18.3.2.1)
Storage rooms larger than 100 sf: 1 Hour

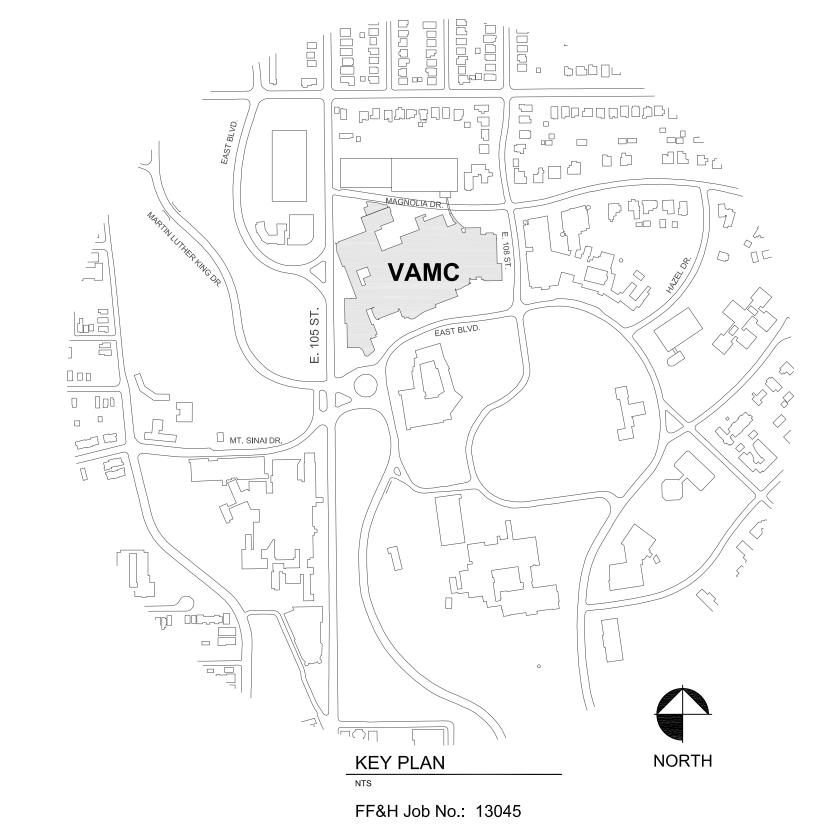
Fredrick, Fredrick & Heller Engineers, Inc.

Mechanical & Electrical Engineer 672 East Royalton Road, Broadview Heights, Ohio 44147

DRAWING INDEX

Final Bid Submittal May 08, 2014

TEMPERATURE CONTROLS PARTIAL SUB-BASEMENT PIPING PLAN - SE AREA PARTIAL SUB-BASEMENT PIPING PLAN - NW AREA PARTIAL SUB-BASEMENT PIPING PLAN - NE AREA PARTIAL BASEMENT PROCESS CHILLED WATER PIPING PLAN PARTIAL BASEMENT MECHANICAL PLANS 1-M7B 1-M7C PARTIAL BASEMENT PROCESS CHILLED WATER PIPING PLAN PARTIAL BASEMENT PROCESS CHILLED WATER PIPING PLANS ENLARGED MECHANICAL ROOM CHILLED WATER PIPING PLANS PARTIAL FIRST FLOOR PROCESS CHILLED WATER PIPING PLANS 1-M8 1-M9A PARTIAL SECOND FLOOR PROCESS CHILLED WATER PIPING PLAN PARTIAL SECOND FLOOR/ROOF MECHANICAL DEMOLITION PLAN 1-M10 PARTIAL THIRD FLOOR/ROOF MECHANICAL DEMOLITION PLAN 1-E1 ELECTRICAL LEGEND AND DETAILS 1-E2 PARTIAL BASEMENT POWER PLANS 1-E3 PARTIAL FIRST FLOOR POWER PLANS 1-E4 PARTIAL SECOND FLOOR ROOF POWER PLANS PARTIAL THIRD FLOOR ROOF POWER PLANS



FULLY SPRINKLERED

Office of	Date 05-08-14	LOOP	ROCESS		Project Title PROVIDE	COVER SHEET	DATE	APPROVALS	DATE	APPROVALS	DATE	APPROVALS
Facilitie Managem	Project No. 541-15-203				TIE-INS			FACILITY MANAGER		CHIEF Planning and Construction		DIRECTOR 00
	DRAWING NO.	Drawn LDH	Checked LDH		Building Number 1	Approved: Division Chief		SHOP FOREMAN 138		CHIEF, Occupational Health & Safety		ASSOCIATE DIRECTOR 00A (B)
Departmen Veterans A	1-X0 Dwg. Of	ND, OHIO	/D. CLEVELAI	ST BLVD	Location 10701 EAST	Approved: Service Director				CHIEF, IRM		CHIEF, ENGINEERING 138

oue

AC UNITS (ACU)

AC CIVITS C	
MARK	ACU-11
LOCATION	SECURITY E24C
SERVICE AREA	TELECOM E24B
TYPE	VERTICAL, TOP DISCHARGE
FAN	
AIRFLOW (CFM)	800
EXTERNAL STATIC PRESSURE (IN. W.G.)	0.5
FAN MOTOR (HORSEPOWER)	1/2
COOLING (PROCESS CHILLED WATER)	
TOTAL CAPACITY (MBH)	26.9
SENSIBLE CAPACITY (MBH)	21.2
ENTERING AIR DRY BULB (*F)	75
RELATIVE HUMIDITY (%)	50
EWT/LWT (*F)	45/55
WATER FLOW (GPM)	6.0
WATER PRESSURE DROP (PSI)	1.3
FILTER	
QUANTITY	(2) MERV 8
SIZE	4x16x20
ELECTRICAL	
VOLTS - PHASE - HZ	460-3-60
MCA	1.4
МОР	15
OPERATING WEIGHT (LBS)	320
DIMENSIONS (L x W x H)	34.5"x36"x72"
ACCESSORIES	
MANUFACTURER'S START-UP	YES
DUCT CONNECTION FLANGES	YES
FACTORY DISCONNECT SWITCH	YES
INTEGRAL CONDENSATE PUMP	YES
BACNET INTERFACE (ANDOVER)	YES
HUMIDIFIER	NO
ELECTRIC REHEAT	NO
MANUFACTURER	_
MODEL	_

PROVIDE FACTORY FLOOR STAND. FACTORY, 2-WAY CHILLED WATER CONTROL VALVE. FACTORY, MICROPROCESSOR-BASED, REMOTE DISPLAY. SHALL CONTROL AND

PROVIDE ALARM HISTORY AND AUTOMATIC SELF-TEST.

FACE SIZE (INCHES)

14x8

NOTES:

1. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

TYPE

SUPPLY GRILLE

2. PROVIDE WITH OPPOSED BLADE DAMPER.

MARK

MONITOR ROOM TEMPERATURE, HUMIDITY, AIR FLOW, AND CLEANLINESS. SHALL

AIR DISTRIBUTION DEVICE (DIFFUSERS, REGISTERS AND GRILLES)

STYLE

DOUBLE DEFLECTION SIDEWALL

COLOR

WHITE

NECK SIZE (INCHES)

12x6

HEAT FYCHANCED (HX)

MARK	HX-1, HX-2
SERVICE	LINEAR ACCELERATOR
TYPE	PLATE AND FRAME
PROCESS CHILLED WATER SIDE	
MEDIA	100% WATER
FLOW (GPM)	17
ENTERING WATER TEMPERATURE (*F)	45
LEAVING WATER TEMPERATURE (*F)	55
WATER PRESSURE DROP (FEET)	6.5
LINEAR ACCELERATOR WATER SIDE	
MEDIA	100% WATER
FLOW (GPM)	4.0
ENTERING WATER TEMPERATURE (*F)	108
LEAVING WATER TEMPERATURE (*F)	65.0
WATER PRESSURE DROP (FEET)	1.0
CAPACITY (BTU/HR)	85,510
NOMINAL SIZE (INCHES)	12"Lx8"Wx19.3"T
OPERATING WEIGHT (LBS)	150
BASIS OF SPECIFICATION	
MANUFACTURER	_
MODEL	_
NOTES	1-5

1. MOUNT ON 4-INCH THICK CONCRETE PAD. 2. HEAT EXCHANGER SHALL BE CONSTRUCTED TO ALLOW A

FUTURE 25% INCREASE IN CAPACITY. 3. 1-INCH INLET/OUTLET PIPE CONNECTIONS. 4. MATERIALS:

-PLATES: 316L STAINLESS STEEL 5. HEAT EXCHANGER SHALL BE FULLY INSULATED WITH THERMAL INSULATING WOOL, "TYPE I". INSULATION SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE, FLEXIBLE WOOL. INSULATION SHALL BE 2" THICK. INSULATION SHALL BE ATTACHED IN ACCORDANCE WITH THE MANUFACTURER'S

RECOMMENDATIONS. ALL INSULATION SHALL BE JACKETED

WITH 6 OZ. CANVAS WITH FIRE RETARDANT LAGGING.

PUMPS P

PUMPS \bigcirc	
MARK	P-1, P-2, P-3, P-4
SERVICE	EQMT WATER
TYPE	INLINE
FLUID	100% WATER
PERFORMANCE	
TEMPERATURE (°F)	65
FLOW (GPM)	4.0
TOTAL HEAD (FEET)	55
MOTOR	
SPEED (RPM)	1750
SIZE (HP)	0.5
VOLT-PHASE-HERTZ	460-3-60
VARIABLE FREQUENCY DRIVE	NO
EFFICIENCY (%)	73.0
BASIS OF SPECIFICATION	
MANUFACTURER	-
MODEL	-
NOTES	1,2

MATERIAL

STEEL

NEOPRENE ISOLATION.

FACTORY

DAMPER

1. INSTALL WITH MANUFACTURER'S REQUIRED NET POSITIVE SUCTION HEAD (NPSH). 2. MOUNT PUMP FROM FLOOR ON ANGLE IRON FRAME WITH

NOTES

1,2

MECHANICAL SYMBOLS:

ABBREVIATIONS:

AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL
CF CD	CENTRIFUGAL FAN COOLING COIL CONDENSATE
CO	CLEAN OUT
CFM	CUBIC FEET PER MINUTE
CUH	CABINET UNIT HEATER
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CW	COLD WATER
Db	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
dB	DECIBELS
Dp DX	DEW POINT TEMPERATURE DIRECT EXPANSION
EA	EXHAUST AIR
EF	EXHAUST FAN
EX.	EXISTING
FC FC	FORWARD CURVED FAN
FLR.	FLOOR
FD	FIRE DAMPER
FSD	COMBINATION FIRE/SMOKE DAMPER
GH	HOT GLYCOL WATER HEATING SUPPLY
GHR	HOT GLYCOL WATER HEATING RETURN
GPM GR	GALLONS PER MINUTE GLYCOL WATER RUN—AROUND SUPPLY
GRR	GLYCOL WATER RUN—AROUND SOFFEI GLYCOL WATER RUN—AROUND RETURN
GV	GRAVITY VENTILATOR
HC	HEATING COIL
HP	HORSEPOWER
HZ	ZONE HUMIDIFIER
MAX.	MAXIMUM
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
NOM. OA	NOMINAL OUTDOOR AIR
PD	PRESSURE DROP
PF	PRE-FILTER
PH	PREHEAT
RA	RETURN AIR
REA	RELIEF AIR
RF	RETURN FAN
RH	REHEAT COIL
Rh	RELATIVE HUMIDITY
RTU	ROOFTOP UNIT
SA Sa Ca	SUPPLY AIR
Sp. Gr. SP	SPECIFIC GRAVITY STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
SS	STAINLESS STEEL
TCP	TEMPERATURE CONTROL PANEL
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
Wh	WET DIII D TEMPEDATIIDE

GENERAL SYMBOLS:

POINT OF CONNECTION BETWEEN AND EXISTING WORK	NE\
LIMIT OF DEMOLITION	
 EXISTING TO REMAIN	X
 EXISTING TO BE REMOVED	XR
 EXISTING TO BE RELOCATED	XRL

CALL OUTS:

REFERENCE TO CODED NOTE

CONTROL SYMBOLS:

PNEUMATIC THERMOSTAT

DDC THERMOSTAT

HUMIDITY SENSOR

SENSOR

HVAC PIPING:

NICAL SYMBOLS:	<u>HVA(</u>	C PIPING:
ONS:	9'-2"	HEIGHT OF BOTTOM OF PIPE ABOVE FLOOR
	—cD—	CONDENSATE PIPING
AIR CONDITIONING UNIT ACCESS DOOR	—F—	FIRE SUPPRESSION PIPE
ABOVE FINISHED FLOOR AIR HANDLING UNIT	-CHWS-	CHILLED WATER SUPPLY
ACCESS PANEL CENTRIFUGAL FAN	-CHWR-	CHILLED WATER RETURN
COOLING COIL CONDENSATE	-PCWS-	PROCESS CHILLED WATER SUPPLY
CLEAN OUT CUBIC FEET PER MINUTE	-PCWR-	PROCESS CHILLED WATER RETURN
CABINET UNIT HEATER CHILLED WATER SUPPLY	_	
CHILLED WATER RETURN COLD WATER	——D—	DRAIN
DRY BULB TEMPERATURE DIRECT DIGITAL CONTROL	—V—	VENT LINE
DECIBELS DEW POINT TEMPERATURE	—⋈— ∇ ∇	SHUTOFF VALVE
DIRECT EXPANSION EXHAUST AIR	8 &	SHUTOFF VALVE IN VERTICAL PIPE
EXHAUST FAN EXISTING	<u> </u>	CHECK VALVE
FORWARD CURVED FAN FLOOR	 -	UNION
FIRE DAMPER COMBINATION FIRE/SMOKE DAMPER	— () —	REDUCER OR INCREASER
HOT GLYCOL WATER HEATING SUPPLY HOT GLYCOL WATER HEATING RETURN	—	PIPE TRANSITION
GALLONS PER MINUTE GLYCOL WATER RUN—AROUND SUPPLY		ECCENTRIC REDUCER
GLYCOL WATER RUN—AROUND RETURN GRAVITY VENTILATOR	<u></u> J	TOP CONNECTION, 45° OR 90°
HEATING COIL HORSEPOWER		BOTTOM CONNECTION, 45° OR 90°
ZONE HUMIDIFIER MAXIMUM MINIMUM		SIDE CONNECTION
NOT TO SCALE	→	DIRECTION OF FLOW
NOMINAL OUTDOOR AIR		
PRESSURE DROP PRE-FILTER PREHEAT	$- \not\!$	TRIPLE DUTY VALVE (SHUTOFF, BALANCE, CHECK)
RETURN AIR RELIEF AIR		STRAINER
RETURN FAN REHEAT COIL	— 	BALANCING VALVE
RELATIVE HUMIDITY ROOFTOP UNIT SUPPLY AIR	_ \	PRESSURE REDUCING VALVE
SPECIFIC GRAVITY STATIC PRESSURE	 \\\-	FLEXIBLE PIPE CONNECTOR
STATIC PRESSURE SENSOR STAINLESS STEEL	\prod	THERMOMETER IN PIPE WELL
TEMPERATURE CONTROL PANEL VOLUME DAMPER	=	PIPE GUIDE
VARIABLE FREQUENCY DRIVE WET BULB TEMPERATURE	-x-	PIPE EXPANSION ANCHOR
EXISTING	√L E.L.	FLEXIBLE METAL EXPANSION LOOP ASSEMBLY
EXISTING TO BE REMOVED EXISTING TO BE RELOCATED	_ <u>⊠</u>	GAUGE PORT (PETE'S PLUG)
	→	DRAIN VALVE WITH HOSE FITTING
	- <u> </u> -	3-WAY CONTROL VALVE
•	½' □ -×-	2-WAY CONTROL VALVE
POINT OF CONNECTION BETWEEN NEW		

PRESSURE GAUGE

NORMALLY OPEN

NORMALLY CLOSED

MANUAL AIR VENT

THREADED CONNECTOR

LOCAL DRAIN, VALVED WITH 3/4"

GENERAL NOTES:

- A. LOCATIONS AND ROUTING OF EXISTING PIPING, DUCTWORK AND EQUIPMENT IS PRESUMED FROM EXISTING DRAWINGS. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL PRIOR TO COMMENCEMENT OF CONSTRUCTION. NOTIFY ENGINEER OF ANY CONDITIONS WHICH WILL NOT PERMIT THE WORK TO BE PERFORMED AS INDICATED ON THESE DRAWINGS.
- B. PRIOR TO INSTALLATION, VERIFY PRECISE LOCATION OF NEW WALL MOUNTED DEVICES WITH VA AND ARCHITECT/ENGINEER.
- C. PROVIDE ADEQUATE SERVICE CLEARANCE FOR ALL MECHANICAL EQUIPMENT. REFER TO INSTRUCTIONS FROM THE EQUIPMENT MANUFACTURER. MAINTAIN A MINIMUM OF 18 INCH CLEARANCE AT CONTROLS FOR VARIABLE AIR VOLUME TERMINALS.
- D. NEW DUCTS OR PIPING SHALL NOT BE ROUTED ABOVE ELECTRICAL PANELS. REFER TO
- ELECTRICAL DRAWINGS FOR LOCATION OF PANELS. E. NO TEMPERATURE SENSING CONTROL DEVICES SHALL BE LOCATED OVER HEAT PRODUCING
- F. WHERE EQUIPMENT IS TO BE REMOVED, REMOVE ALL ASSOCIATED PIPING, DUCTWORK,
- MATCH ADJACENT SURFACES. G. CONTRACTOR SHALL REMOVE AND REPLACE CEILING TILES AND GRID AS REQUIRED TO COMPLETE DEMOLITION AND NEW WORK IN AREAS INDICATING WORK. CONTRACTOR SHALL BE

CONTROLS, CONCRETE PADS, SUPPORTS, ETC. PATCH WALL AND FLOOR OPENINGS TO

- RESPONSIBLE FOR REPLACING ANY TILES OR GRID DAMAGED DUE TO THIS WORK. H. COORDINATE ALL SHUT-DOWNS OF EXISTING SYSTEMS WITH VA PER SPECIFICATIONS. ALL SHUT-DOWNS SHALL OCCUR DURING WEEKENDS OR BETWEEN 5:00PM AND 7:00AM ON
- WEEKDAYS ("OFF-HOURS"). INCLUDE ALL PREMIUM TIME CHARGES IN BID. I. ALL NOISE GENERATING OPERATIONS, INCLUDING CUTTING OF CEILINGS, WALLS AND FLOORS, CORING, DRILLING, ETC. SHALL BE SCHEDULED DURING WEEKENDS OR BETWEEN 5:00PM
- J. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING TO ADEQUATELY LIGHT ALL CONSTRUCTION AREAS, TEMPORARILY PARTITIONED AREAS, AND EXIT CORRIDORS MAINTAINED DURING CONSTRUCTION.

AND 7:00AM ON WEEKDAYS ("OFF-HOURS"). INCLUDE ALL PREMIUM TIME CHARGES IN BID.

PROJECT COORDINATION NOTES:

- A. THIS PROJECT CONSISTS OF MULTIPLE TRADES OF WORK PERFORMED WITHIN AN EXISTING BUILDING, ALL OF WHICH ALLOWS VERY LITTLE PERMISSIBLE RANGE OF VARIATION. THE CONTRACTOR SHALL TAKE CAREFUL CONSIDERATION WITH THE COORDINATION AND INSTALLATION OF THE MULTITUDE OF NEW SYSTEMS WHILE ALSO ACCOMMODATING ANY EXISTING SYSTEMS TO REMAIN.
- B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL TRADES ASSOCIATED WITH THIS PROJECT AND ISSUING COORDINATION PLANS PRIOR TO COMMENCEMENT OF EACH PHASE OF CONSTRUCTION.
- C. THE COORDINATION DRAWINGS SHALL ILLUSTRATE ALL SYSTEMS IN PLACE. NO EXCEPTIONS! THE CONTRACTOR SHALL SHOW ALL NECESSARY OFFSETS, TRANSITIONS, ETC. AS REQUIRED IN ORDER TO ACCOMMODATE CONDITIONS IDENTIFIED IN THE FIELD.
- D. IF CONFLICTS ARE IDENTIFIED DURING THE DEVELOPMENT OF COORDINATION PLANS, THE CONTRACTOR SHALL NOTIFY THE VA COR, ARCHITECT, AND/OR ENGINEER OF ANY CONDITIONS WHICH WILL NOT PERMIT THE WORK TO BE PERFORMED AS INDICATED ON THE PROJECT
- E. A COMPLETED SET OF COORDINATION PLANS ISSUED FOR REVIEW SHALL CONFIRM THAT THE CONTRACTOR FULLY UNDERSTANDS THE PROJECT CONSTRAINTS AND ALL KNOWN CONFLICTS HAVE BEEN ADDRESSED.

PROCESS EQUIPMENT SHUTDOWN NOTES:

- A. PROCESS LOOP EQUIPMENT CONNECTIONS SHALL BE LIMITED TO ONE EQUIPMENT GROUP AT A TIME. THE CONTRACTOR SHALL COMPLETE THE SHUTDOWN, CONNECTION, AND START-UP OF ONE EQUIPMENT GROUP BEFORE STARTING THE NEXT.
- B. CONTRACTOR SHALL SUBMIT AN OVERALL SHUTDOWN SCHEDULE TO THE COR FOR APPROVAL. SPECIFIC EQUIPMENT SHUTDOWN REQUEST MUST BE SUBMITTED TO THE VA COR 14 DAYS PRIOR TO THE SHUTDOWN. THE REQUEST SHALL INCLUDE: SHUTDOWN DATE AND TIME, EQUIPMENT AND ROOMS AFFECTED, DATE AND TIME EQUIPMENT WILL BE BACK IN SERVICE, TEMPORARY COOLING EQUIPMENT REQUIRED.
- C. BALANCER SHALL RECORD CHILLED WATER FLOW AND DISCHARGE AIR TEMPERATURE OF EACH PIECE OF EQUIPMENT PRIOR TO THE SCHEDULED SHUTDOWNS.
- D. ALL PROCESS LOOP SHUTDOWNS AND CONNECTIONS SHALL OCCUR OVER THE WEEKEND, SATURDAY AND SUNDAY. THE SCOPE FOR A WEEKEND CONNECTION SHALL INCLUDE: NOTIFY FACILITIES AND HAVE THEM SHUT OFF THE EQUIPMENT, VALVE OFF AND DRAIN CHILLED WATER BRANCHES FEEDING THE EQUIPMENT, CUT IN THE TEES AND VALVES, FLUSH BRANCH PIPING, CLEAN STRAINER, FILL BRANCHES, OPEN VALVES TO PROCESS COOLING LOOP, ADJUST BALANCE VALVES TO OBTAIN REQUIRED FLOWS, START-UP EQUIPMENT, VERIFY
- E. THE CONTRACTOR SHALL PROVIDE TEMPORARY COOLING EQUIPMENT FOR EACH SPACE THAT MUST REMAIN IN USE. THIS INCLUDES PROVIDING HOSES FOR WATER AND DRAIN CONNECTIONS, OR TEMPORARY DUCTWORK TO REJECT HOT AIR.

PROJECT PHASING NOTES:

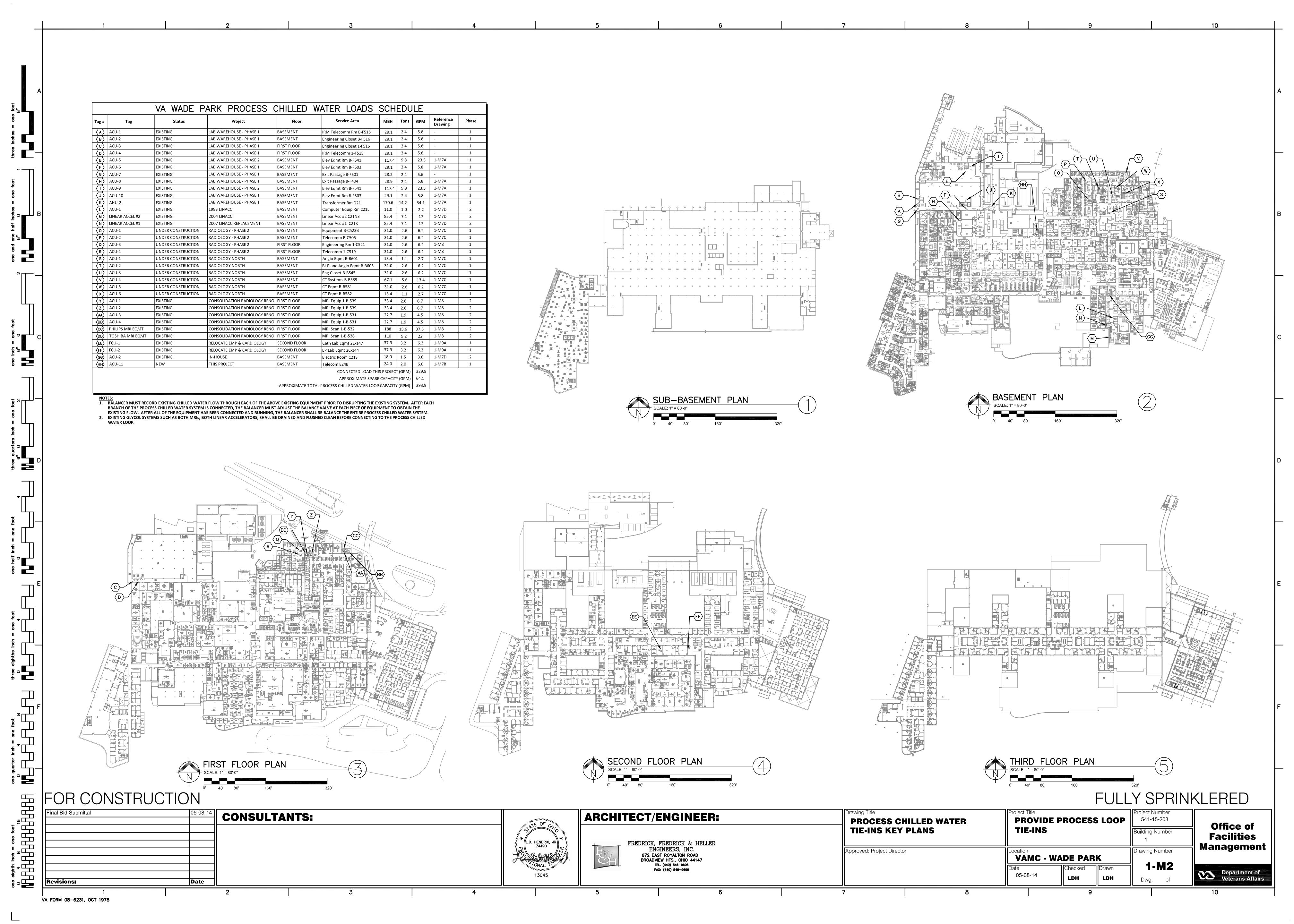
- A. THIS PROJECT WILL INVOLVE TWO (2) GENERAL PHASES:
- PHASE 1: NON-CRITICAL PROCESS LOADS, AND PHASE 2: CRITICAL PROCESS LOADS
- B. PHASES SHALL OCCUR IN SEQUENTIAL ORDER. UNDER EACH PHASE, INDIVIDUAL EQUIPMENT SHUTDOWN AND PROCESS LOOP CONNECTION SCHEDULES SHALL BE ESTABLISHED WITH VA COR, USER GROUP, AND ARCHITECT/ENGINEER.
- C. NOTE THAT INDIVIDUAL EQUIPMENT SHALL OCCUR UNDER THE ASSIGNED PHASE. REFERENCE PROCESS CHILLED WATER LOADS SCHEDULE, DRAWING 1-M2.
- D. PHASE 2 CRITICAL PROCESS LOADS SHALL NOT BE CONNECTED UNTIL ALL PHASE 1 NON-CRITICAL PROCESS LOADS HAVE BEEN CONNECTED AND HAVE OPERATED WITHOUT INTERRUPTION OR ISSUE FOR A PERIOD OF 21 DAYS.

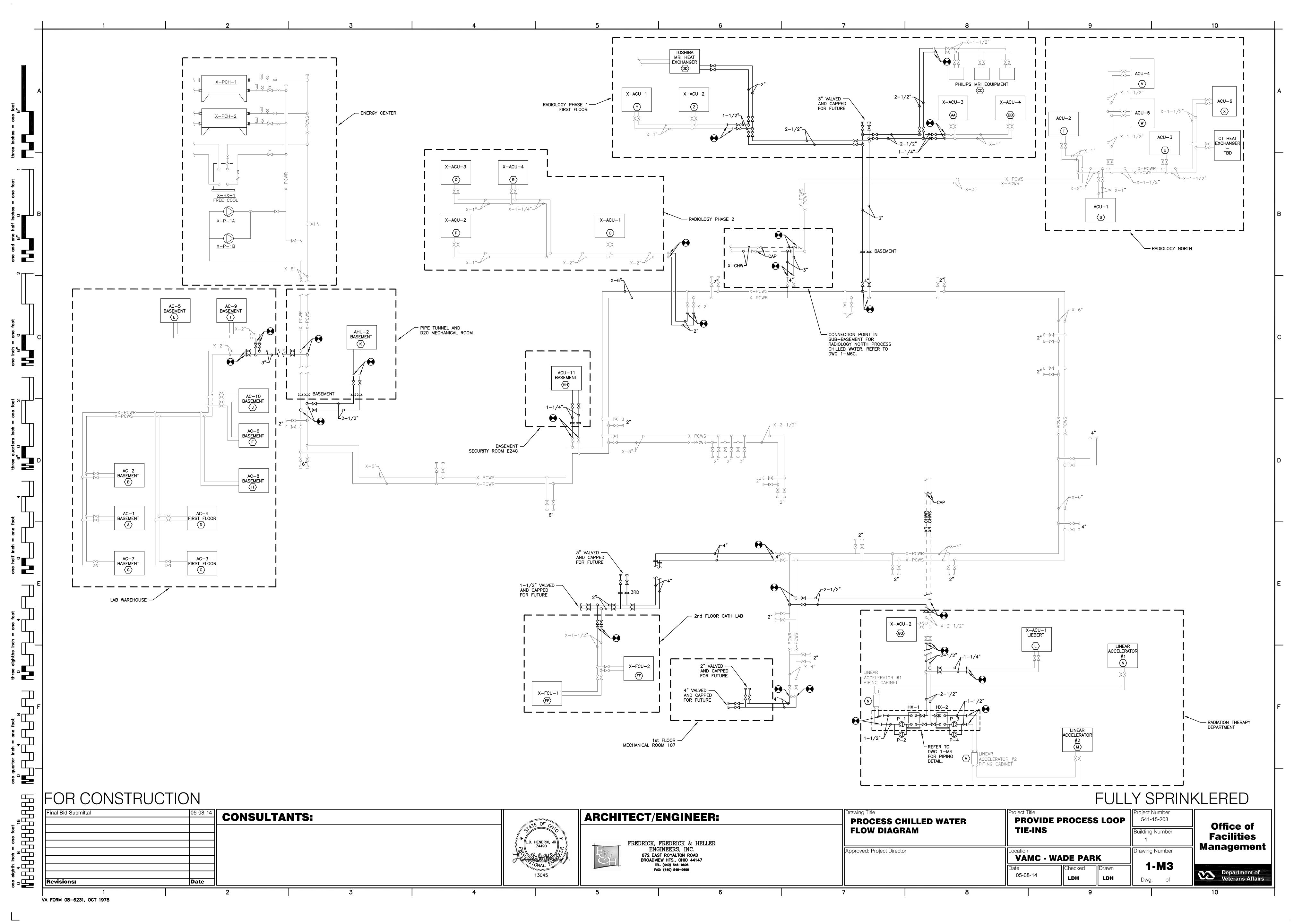
OR CONSTRUCTION

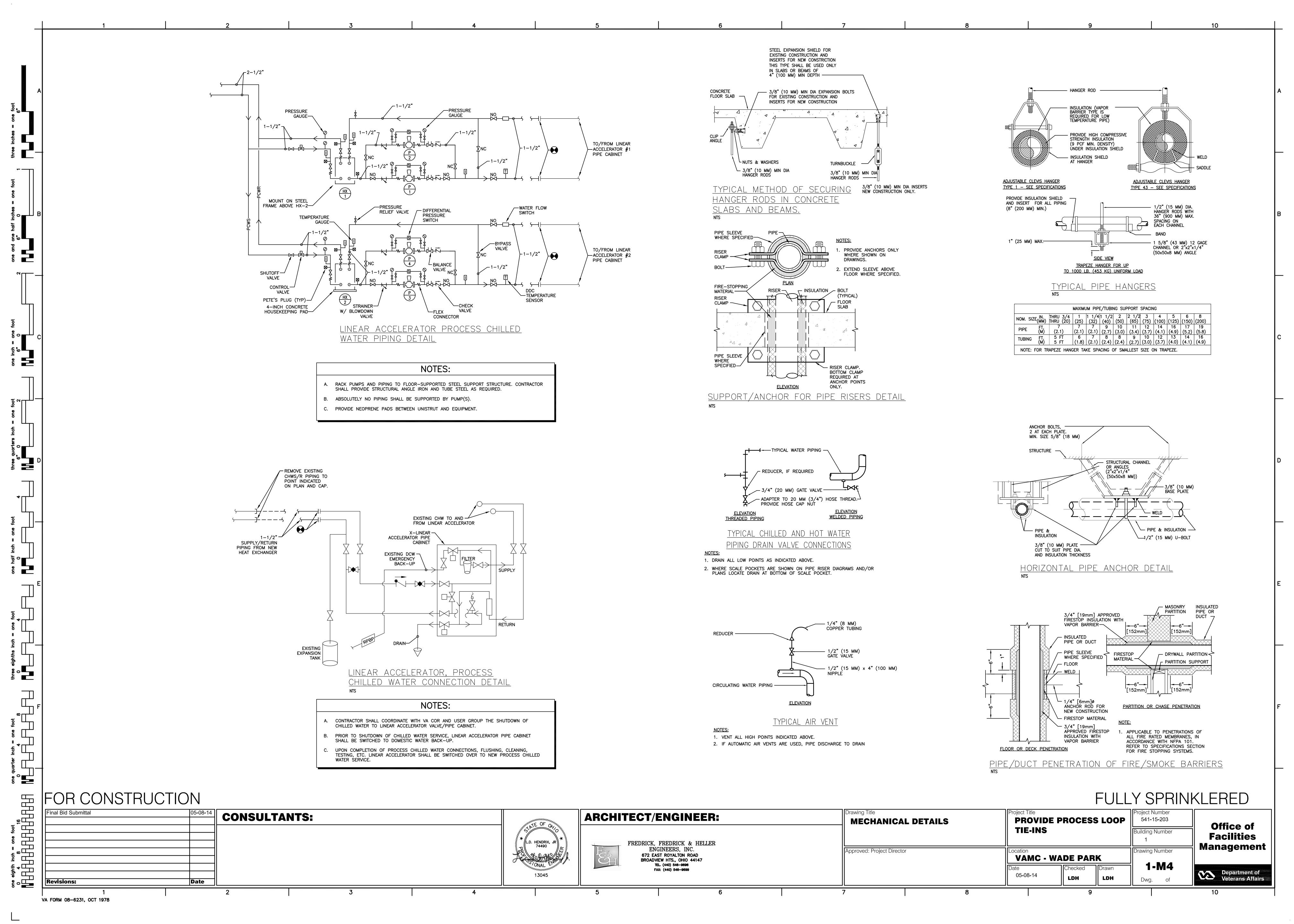
VA FORM 08-6231, OCT 1978

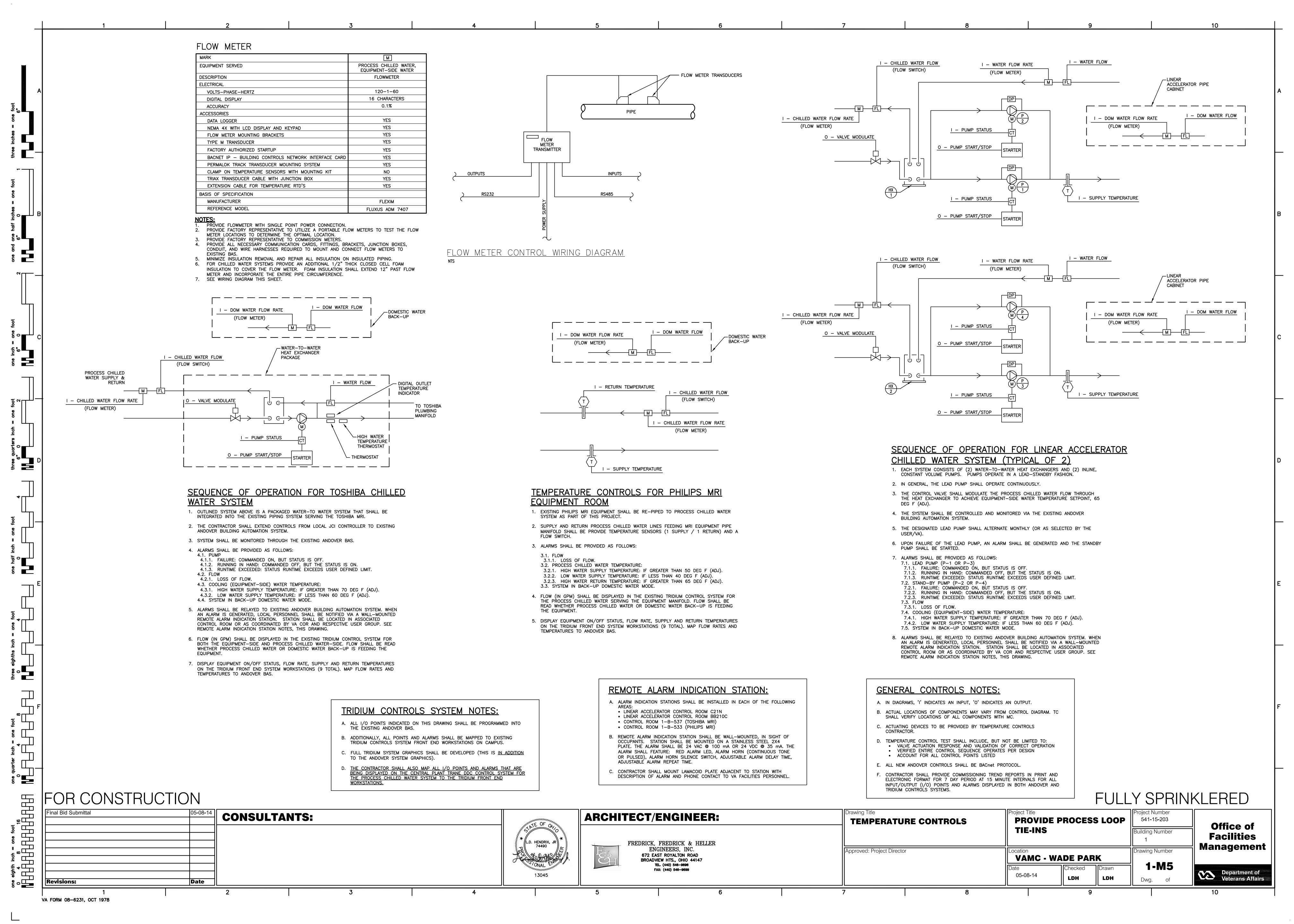
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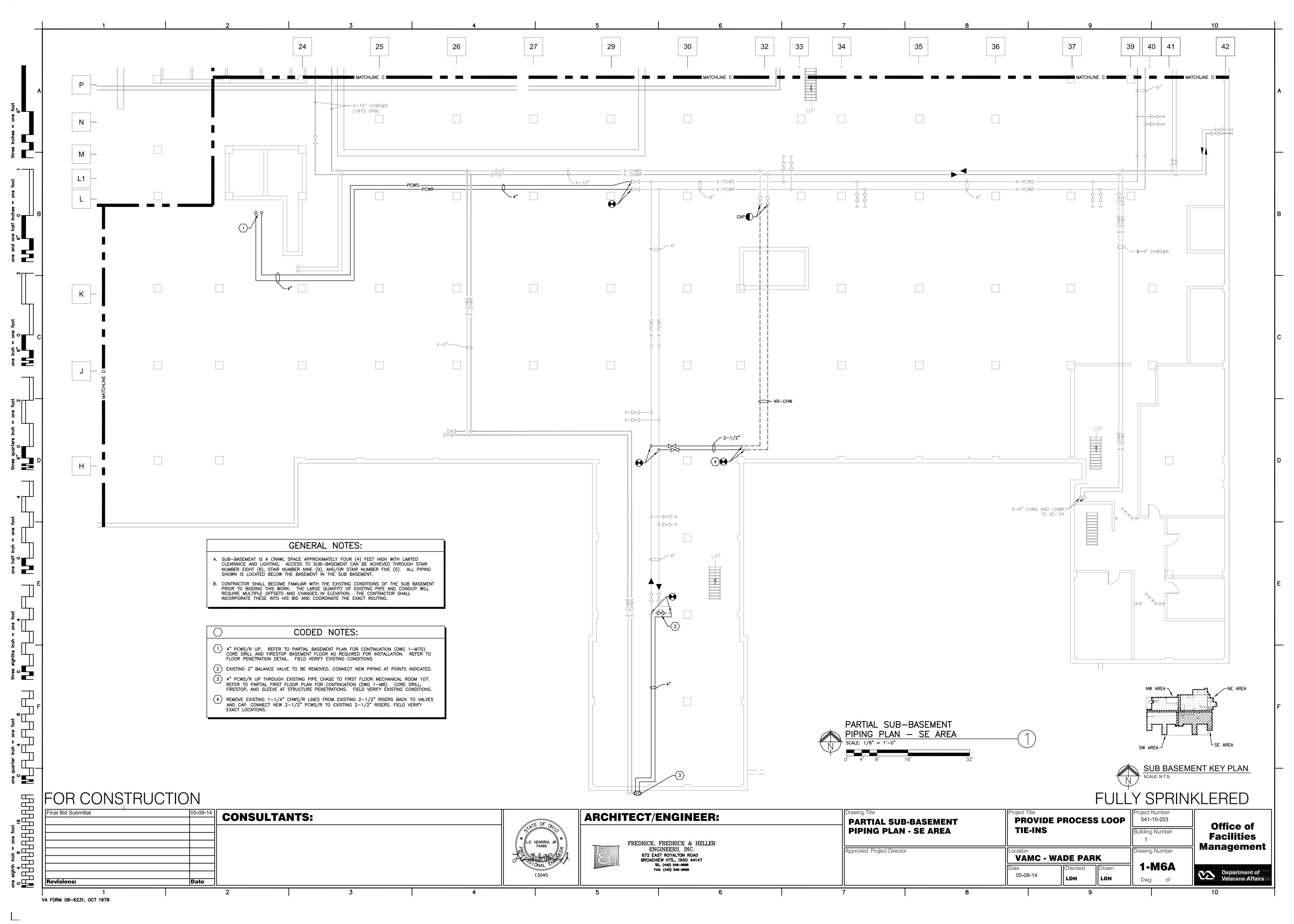
Final Bid Submittal ARCHITECT/ENGINEER: **CONSULTANTS: PROVIDE PROCESS LOOP** 541-15-203 SYMBOLS, NOTES, AND Office of **SCHEDULES** TIE-INS Building Number **Facilities** FREDRICK, FREDRICK & HELLER Management ENGINEERS, INC. Approved: Project Director 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 **VAMC - WADE PARK** 1-M1 FAX: (440) 546-9699 Department of Veterans Affairs 05-08-14 LDH LDH Date

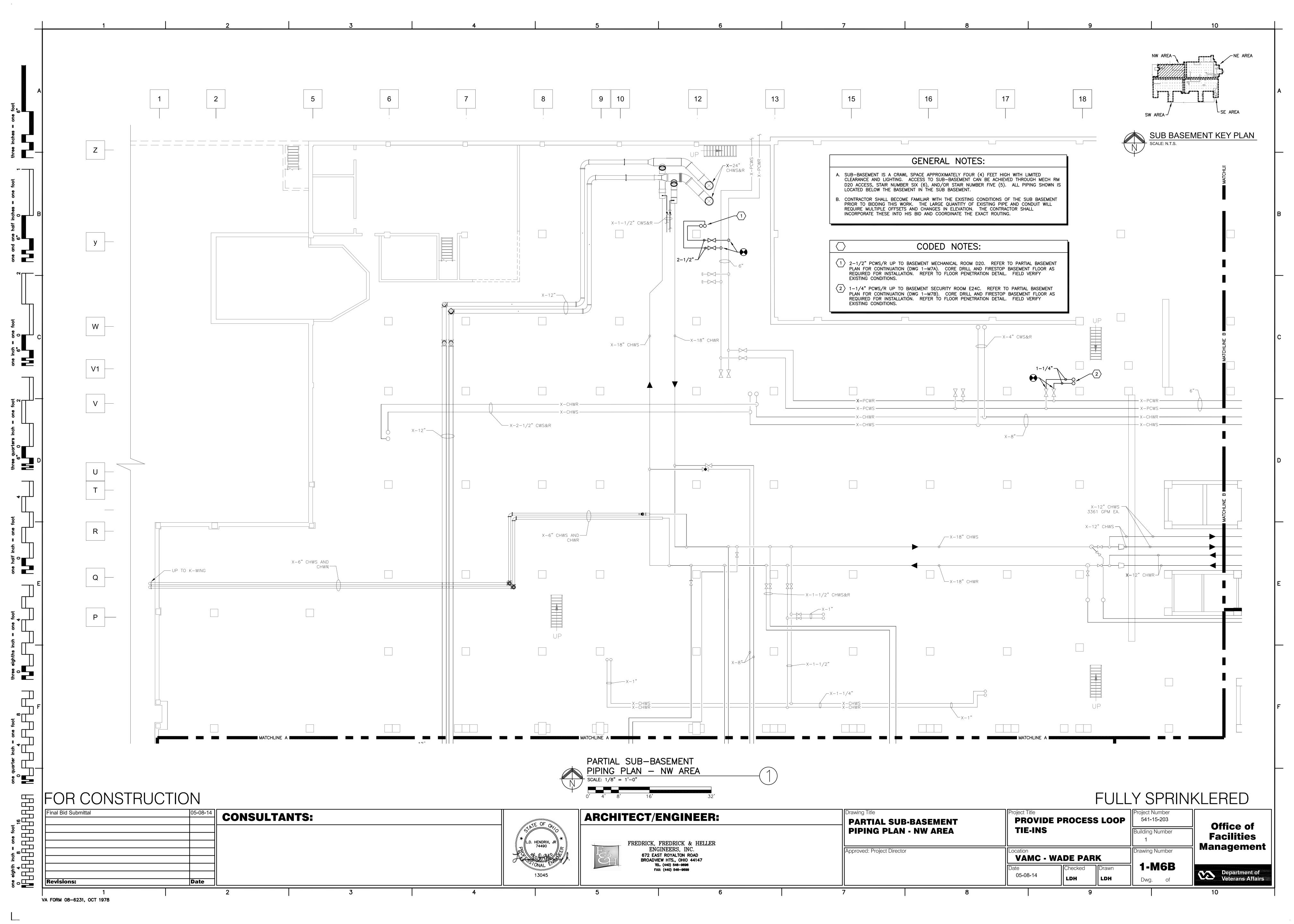


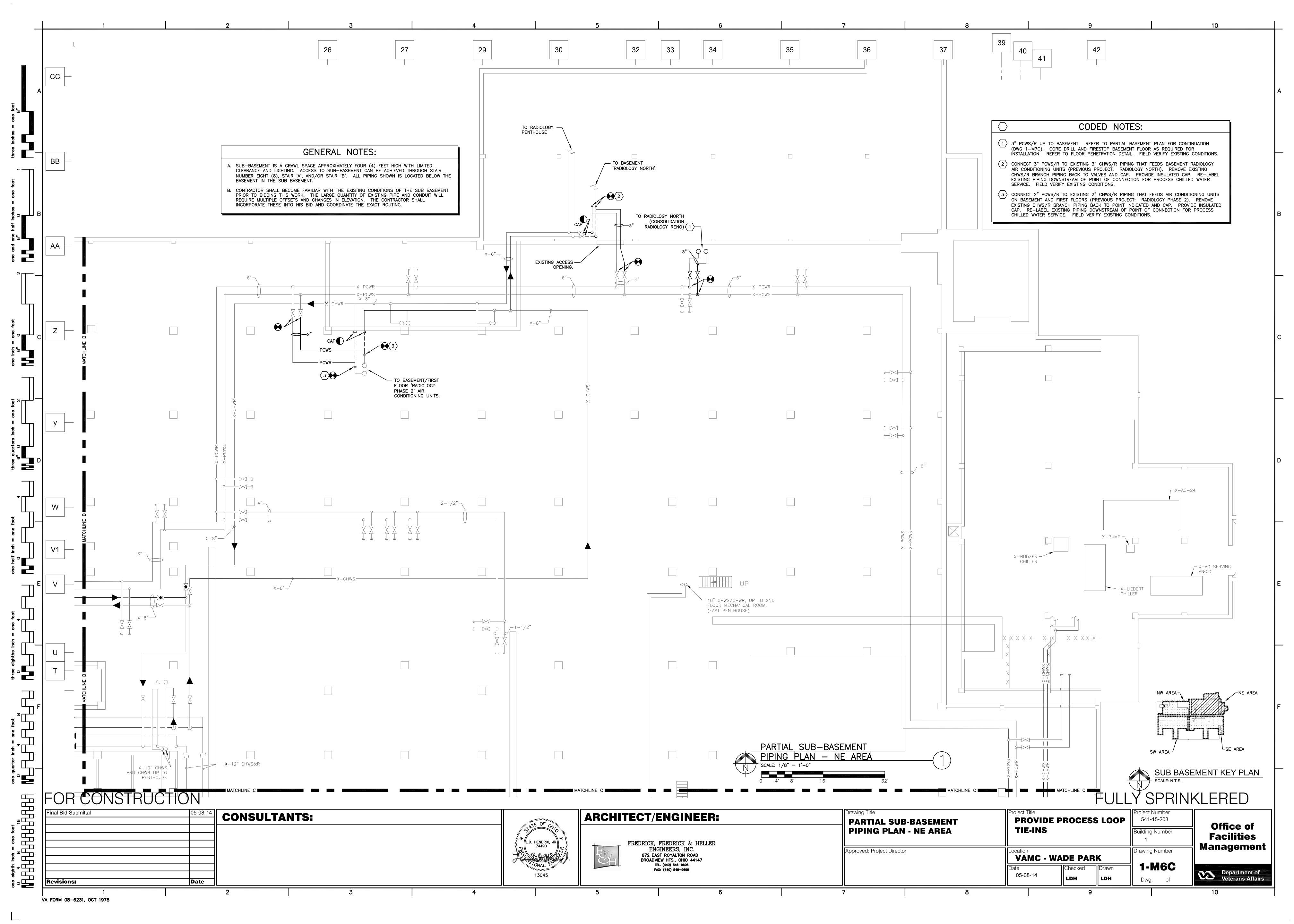


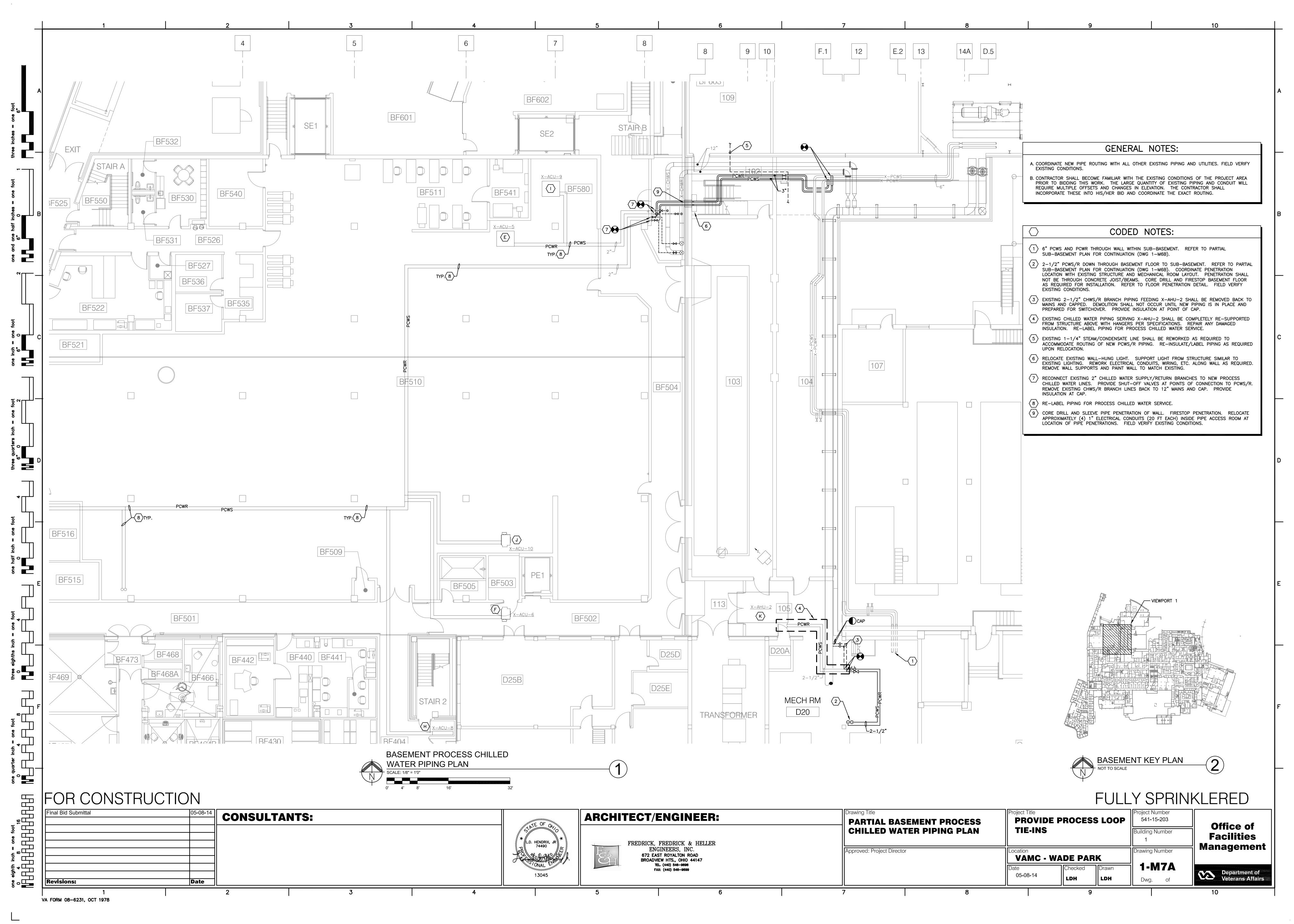


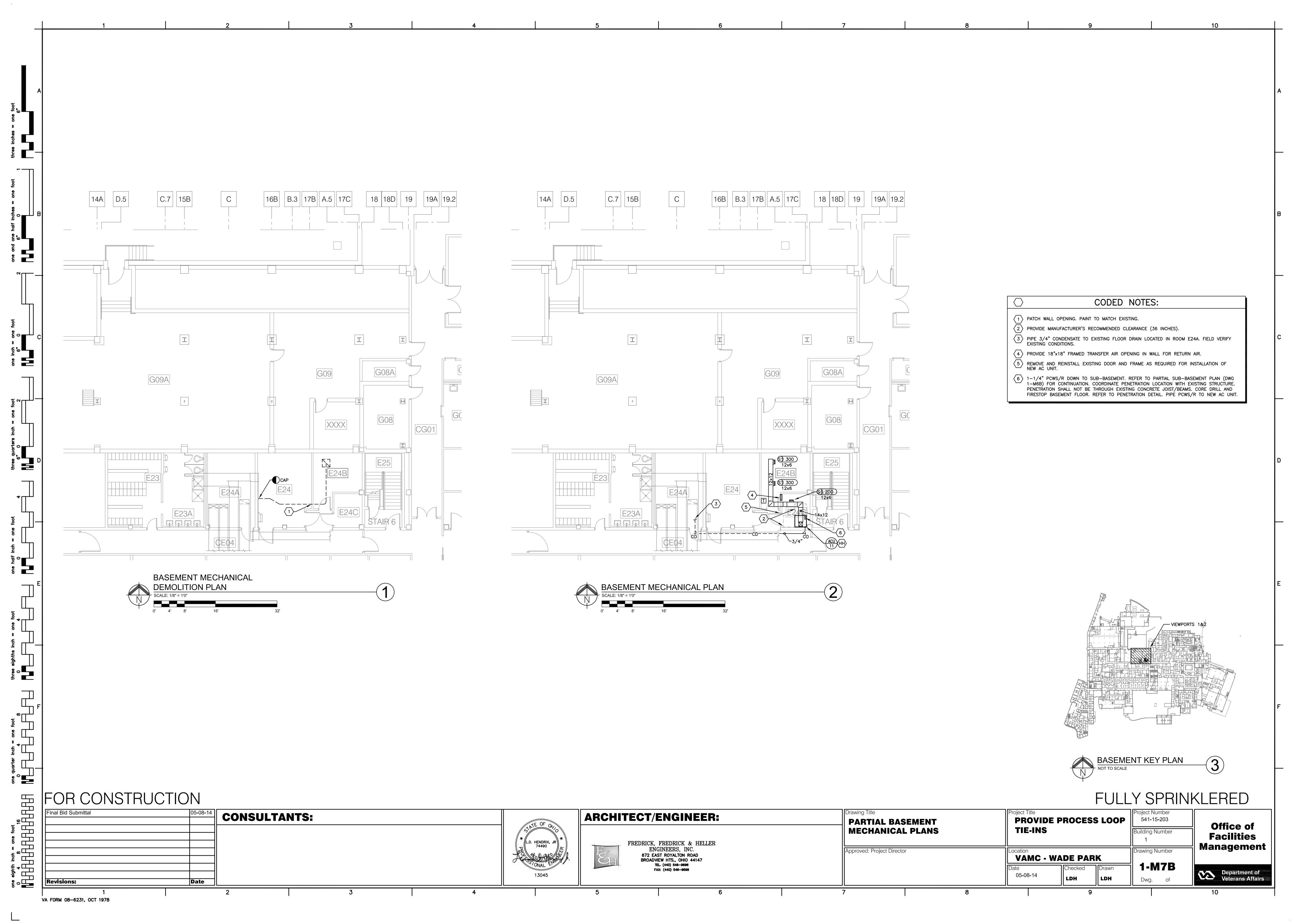


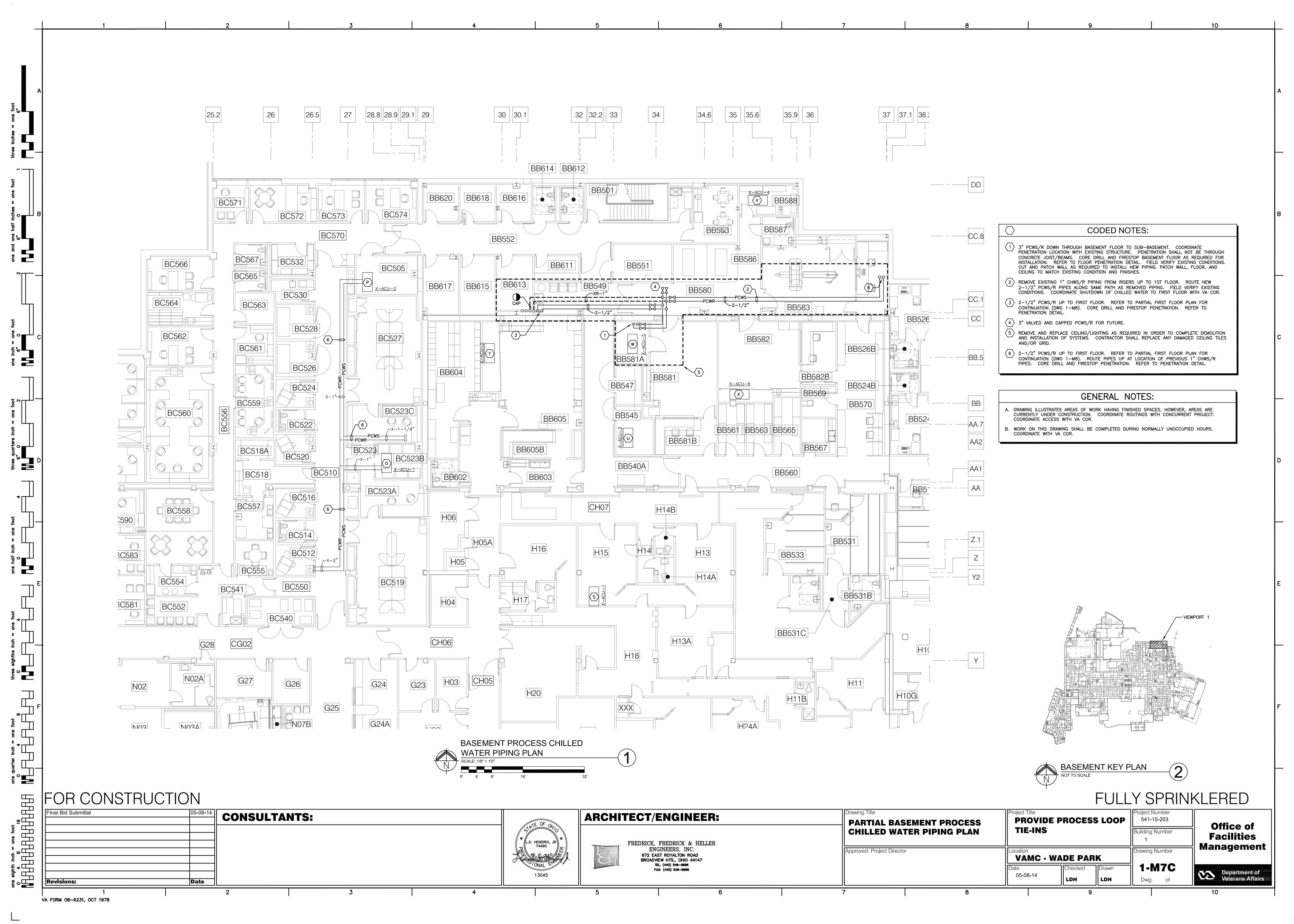


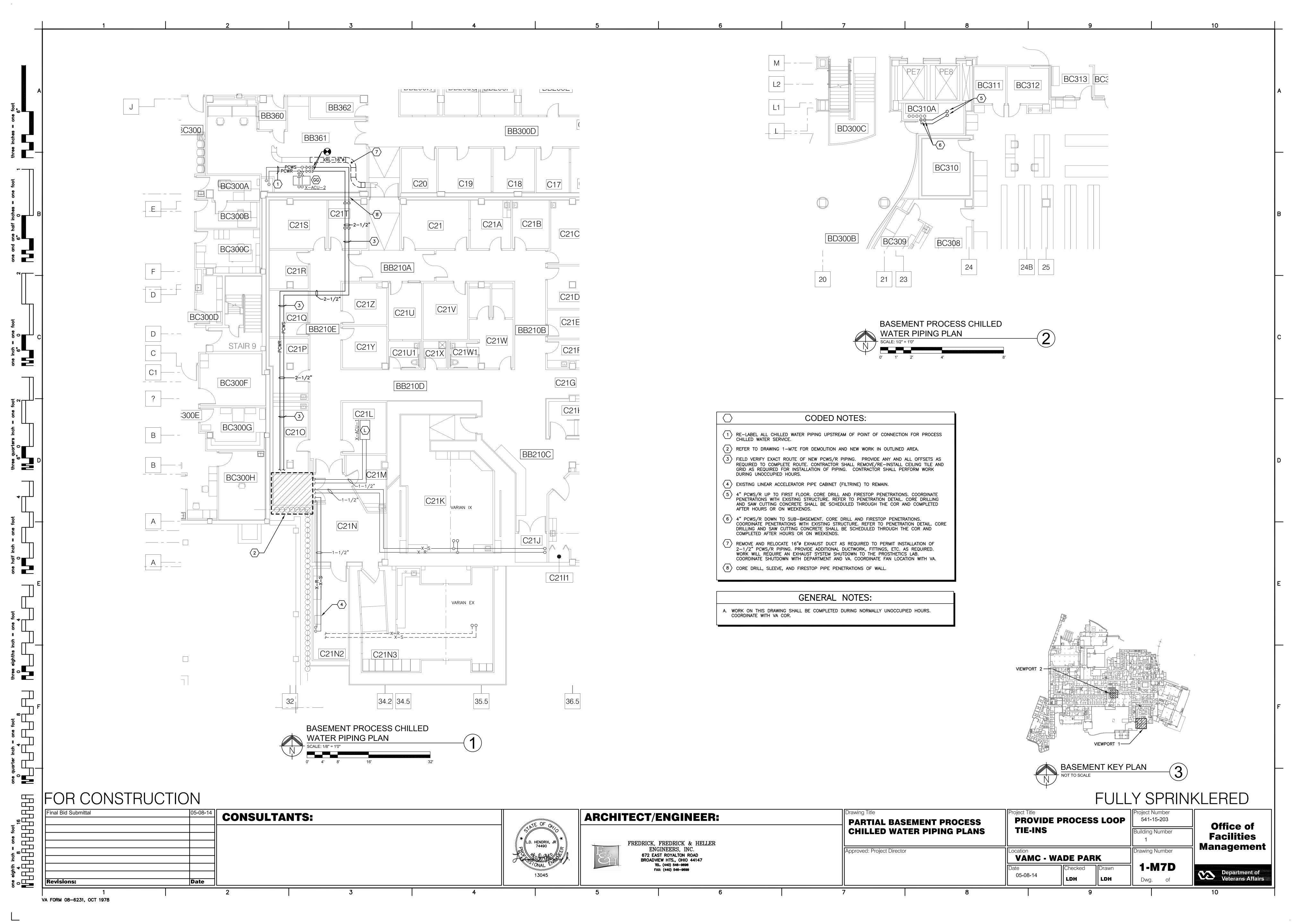


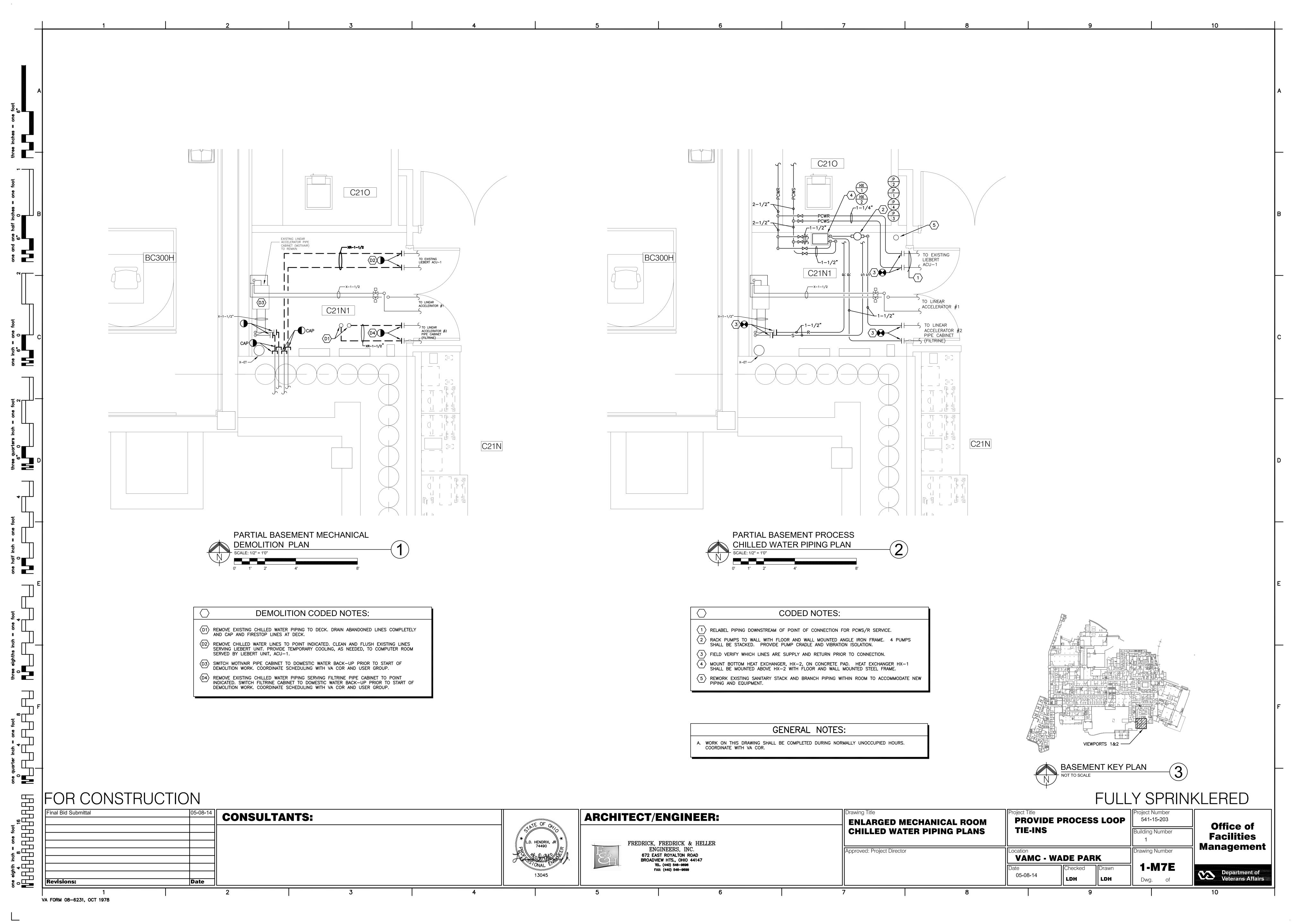


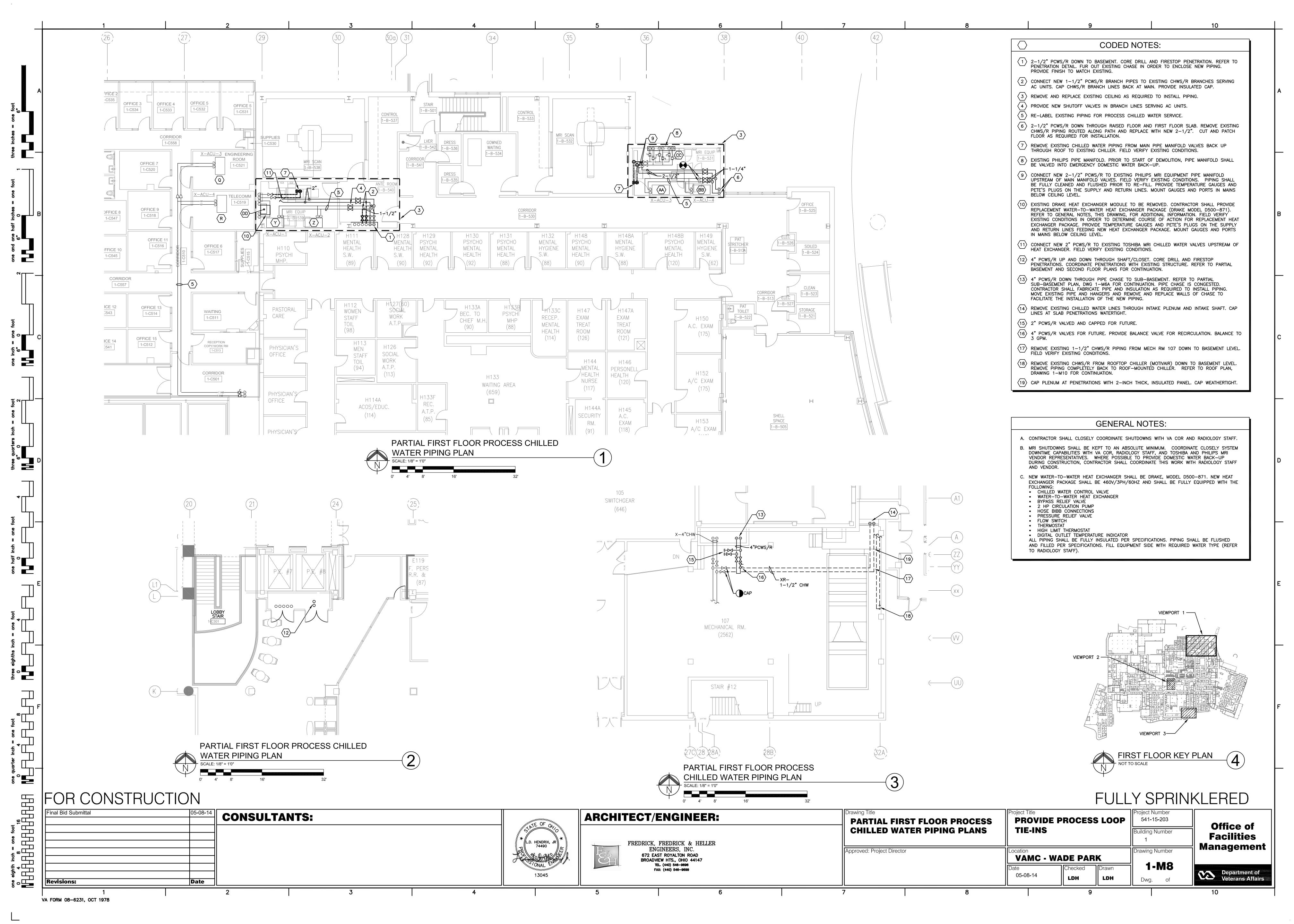


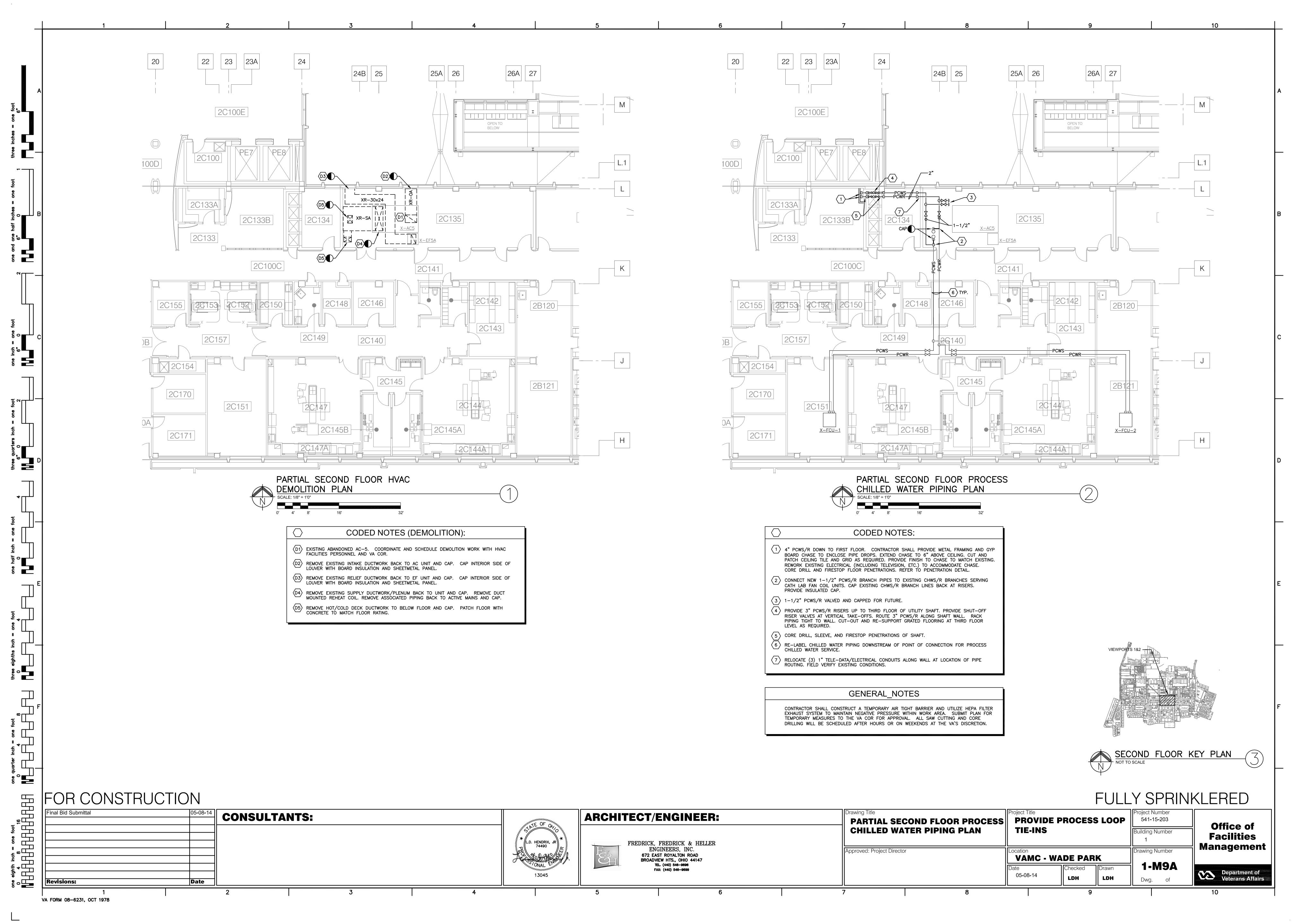


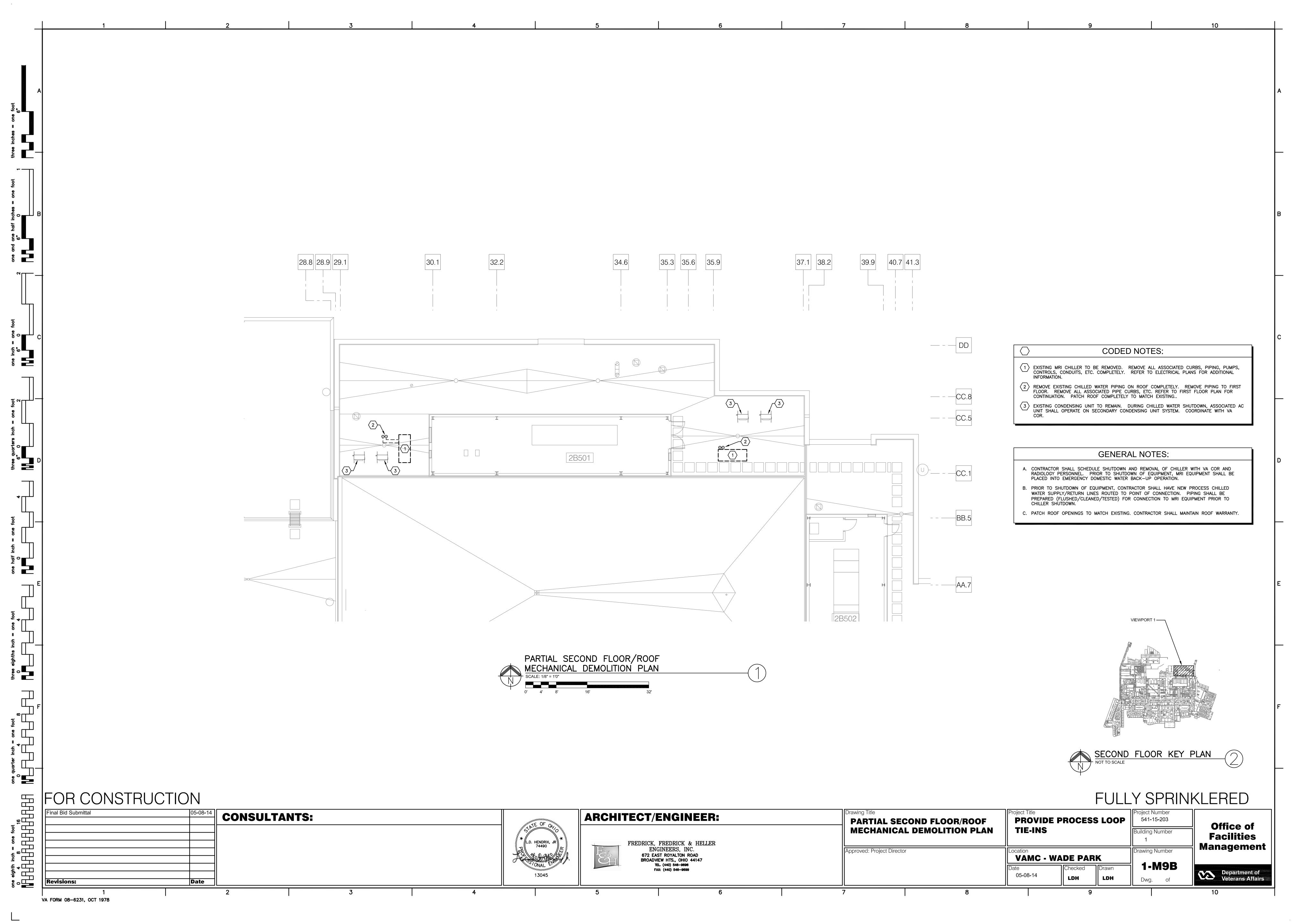


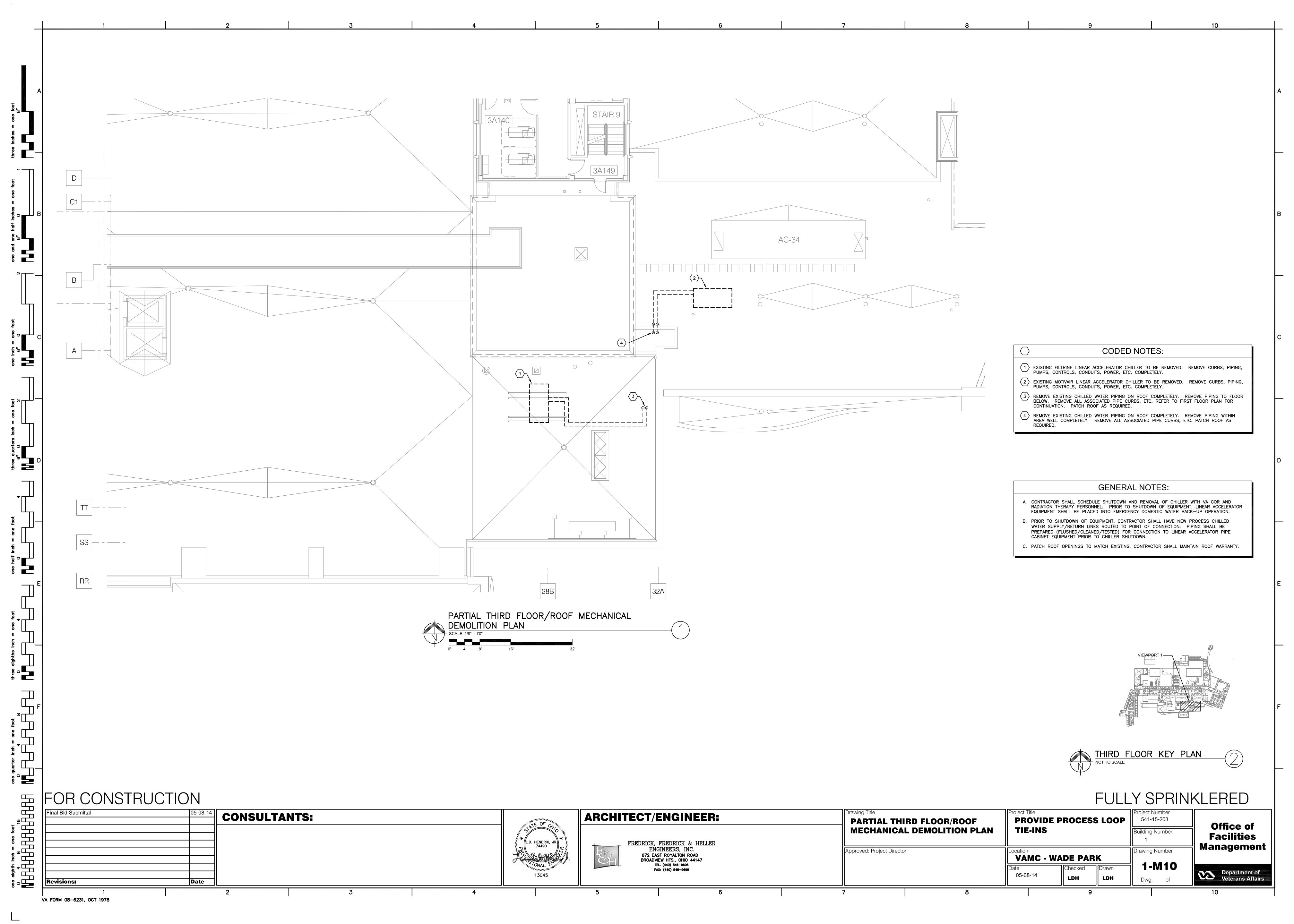


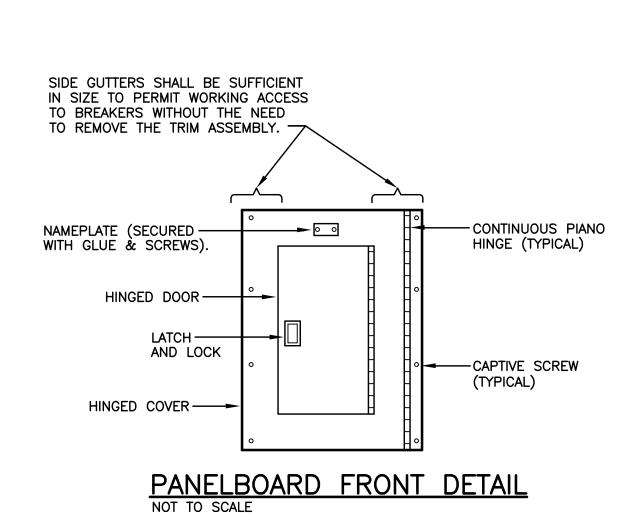












NOT TO SCALE

PANELBOARD CONSTRUCTION NOTES:

- ALL NEW PANELBOARDS SHALL BE PROVIDED WITH <u>SUB-FEED LUGS</u> AND SUFFICIENT SIZE WIRING GUTTERS TO ACCOMMODATE ALL FEEDERS (INCLUDING FUTURE) IN A CODE COMPLYING MANNER. FEED THROUGH LUGS ARE NOT ACCEPTABLE.
- (B) ALL NAMEPLATES SHALL BE ENGRAVED PHENOLIC. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- (C) REFER TO SPECIFICATIONS FOR PANELBOARD CONSTRUCTION REQUIREMENTS REGARDING BUS, DIRECTORIES, FINISHES, ETC.
- PROVIDE UPDATED TYPED SCHEDULES IN EXISTING PANELS, AND NEW SCHEDULES IN NEW PANELS. SCHEDULE DESCRIPTIONS SHALL INCLUDE TYPE OF LOAD (RECEPTACLES, LIGHTING, EWC, ETC.) AND ROOM NUMBER WHERE LOAD IS LOCATED.
- E CIRCUIT ASSIGNMENTS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY AVAILABILITY PRIOR TO ROUGH—IN AND ORDERING ENGRAVED COVERPLATES. REPORT ANY DEVIATIONS TO ENGINEER FOR APPROVAL.

PANELBOARD CONSTRUCTION

NEW PANELBOARD SCHEDULES:

PANEL: LOCATION: MOUNTING: COMMENTS:	HEBEQ1 - 480 ELEC RM L-D4-05 SURFACE MIN 35KAIC SCCR	/277V -	3Ø -	- 4W		OCP: MAIN:	ESSENTIAL EQUIF 400A MLO	PMENT
KVA:	DESCRIPTION:	CB:	CCT:	N -•	CCT:	CB:	DESCRIPTION:	KVA:
0.00			1	- - ♦ - - -	_ 2			0.00
0.00	ACU-11	15/3	3		- 4	30/3	PROVISION	0.00
0.00			5		- 6			0.00
0.00			7	+	- 8			0.00
0.00	SPARE	15/3	9		- 10	30/3	PROVISION	0.00
0.00			11		- 12			0.00
0.00			13		_ 14			0.00
0.00	SPARE	15/3	15]+++	- 16	30/3	PROVISION	0.00
0.00			17]- -	- 18			0.00
0.00			19] 	_ 20			0.00
0.00	SPARE	15/3	21] +++	- 22	30/3	PROVISION	0.00
0.00			23	<u> </u>	- 24			0.00
0.00			25] 	- 26			0.00
0.00	PROVISION	60/3	27	<u> </u>	- 28	30/3	PROVISION	0.00
0.00			29	<u> </u>	- 30			0.00
0.00			31	+	- 32			0.00
0.00	PROVISION	60/3	33] +++	- 34	60/3	PROVISION	0.00
0.00			35	<u> </u>	- 36			0.00
0.00			37	+	- 38			0.00
0.00	PROVISION	30/3	39	++-	40	100/3	PROVISION	0.00
0.00			41]+++	42			0.00
				• • •	-	GROUN	ND BUS	
		TOTAL CONI					TOTAL DEMAND AMP	S: 0.00

WIRING DEVICES

- 20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 24" AFF UNLESS OTHERWISE NOTED.
- DOUBLE 20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 24" AFF UNLESS OTHERWISE NOTED.
- 20A-125V, HOSPITAL GRADE, GROUND FAULT INTERRUPTER RECEPTACLE, MOUNT AT 24" AFF UNLESS OTHERWISE NOTED.

SAME DEVICE TYPES AS INDICATED ABOVE EXCEPT CONNECTED TO EMERGENCY CRITICAL CIRCUIT.

WIRING TERMINATIONS

- ① ①H JUNCTION BOX, CEILING OR WALL MOUNTED, 4" SQ. WITH GROUND LUG, UNLESS OTHERWISE NOTED. SC - SINK STATION CONTROLS. CONNECT PER MANUFACTURES WIRING DIAGRAM. EWC - ELECTRIC WATER COOLER.
- MOTOR NUMBER DENOTES HORSEPOWER

TELECOMMUNICATIONS SYSTEM LEGEND

#D TELECOMMUNICATIONS OUTLET "TCO", PROVIDE THE FOLLOWING PER TCO - 6"SQ x 2.5" DEEP BOX WITH 4-PORT COVERPLATE. - PROVIDE 1" MINIMUM CONDUIT WITH PULLWIRE. TERMINATE ALL OUTLET CONDUITS ABOVE CABLE TRAY AND PROVIDE

- PROVIDE (# QUANTITY) DATA JACK MODULES AND CAT6 CABLES TERMINATED TO NEAREST IRM ROOM.

POWER DISTRIBUTION EQUIPMENT (FLOOR PLAN VIEW)

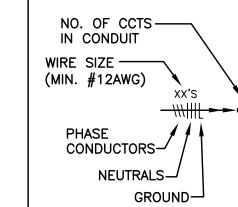
GROUNDING BUSHING WITH #6 COPPER CONNECTION TO CABLE TRAY.

- 208/120V-3ø-4W PANELBOARD UNLESS OTHERWISE NOTED. MOUNT AT 78" AFF TO TOP OF PANEL.
- 480/277V-3ø-4W PANELBOARD UNLESS OTHERWISE NOTED. MOUNT AT 78" AFF TO TOP OF PANEL.
- GENERAL PURPOSE, 3 PHASE DRY-TYPE TRANSFORMER.
- FUSED DISCONNECT SWITCH SIZE AND TYPE AS NOTED. PROVIDE CLASS RK1 FUSES UNLESS OTHERWISE NOTED. NEMA 1 ENCLOSURE UNLESS OTHERWISE NOTED.

MOTOR AND MOTOR CONTROLLERS (FLOOR PLAN VIEW)

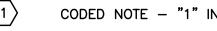
- COMBINATION CIRCUIT BREAKER/MAGNETIC MOTOR STARTER 12"WX16"HX8"D MAXIMUM DIMENSIONS (REFER TO SPECIFICATIONS 262911) AND MINIMUM NEMA SIZE O CONTACTS AND NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED. PROVIDE (2) AUX. CONTACTS, UNLESS OTHERWISE NOTED.
- VARIABLE SPEED MOTOR CONTROLLER (REFER TO SPECIFICATIONS SECTION 262911).
- 120V-10 OR 277V-10 (AS REQUIRED) MANUAL MOTOR STARTER WITH INTEGRAL OVERLOAD PROTECTION
- 120V-10 OR 277V-10 (AS REQUIRED) MOTOR STARTER COMPLETE WITH INTEGRAL OVERLOAD PROTECTION AND "HAND-OFF-AUTO" SELECTOR SWITCH.
- 120V-10 OR 277V-10 (AS REQUIRED) LOCKABLE MANUAL SWITCH (NO THERMAL OVERLOADS).

BRANCH CIRCUIT WIRING



BRANCH CIRCUIT HOME RUN TO PANEL - ARROWHEADS INDICATE CIRCUITS. WIRE INDICATED ARE GREEN GROUND, SEPARATE NEUTRALS (SHARED NEUTRALS ARE NOT PERMITTED FOR BRANCH CIRCUITS) AND THREE HOT LEGS (A DIFFERENT PHASE FOR EACH CIRCUIT) MAXIMUM THREE CIRCUITS PER CONDUIT. 3/4" MINIMUM CONDUIT WITH WIRE SIZE INDICATED ON DRAWING ("XX" INDICATES AWG SIZE). ALL POWER WIRING SHALL BE STRANDED COPPER CONDUCTORS WITH THHN/THWN INSULATION. PROVIDE SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SAME SIZE AS PHASE AND NEUTRAL, UNLESS OTHERWISE NOTED) FOR EACH CONDUIT. CONDUIT WIRE FILLS SHALL BE IN ACCORDANCE WITH LATEST NATIONAL ELECTRIĆ CODE.

GENERAL LEGEND

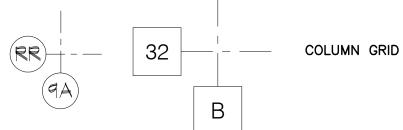


CODED NOTE - "1" INDICATES NOTE NUMBER.

MECHANICAL EQUIPMENT IDENTIFIER



DETAIL REFERENCE - "1" INDICATES DETAIL NUMBER, "1-E01" INDICATED DRAWINGS NUMBER.



REVISION REFERENCE NUMBER

GENERAL NOTES

- 1. ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE UNLESS OTHERWISE NOTED.
- 2. ALL NEW WALL MOUNTED ELECTRICAL DEVICES ARE TO BE INSTALLED FLUSH IN WALL UNLESS OTHERWISE NOTED. ALL ELECTRICAL CONDUIT SHALL BE CONCEALED BEHIND FINISHED WALLS AND ABOVE FINISHED CEILING UNLESS OTHERWISE NOTED. THE COST TO CUT AND PATCH WALLS SHALL BE THE RESPONSIBILITY OF THE TRADE REQUIRING THE CUTTING.
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS REQUIRED FOR ELECTRICAL WORK. ELECTRICAL CONTRACTOR SHALL REPLACE ANY DAMAGED CEILING TILES.
- 4. PRIOR TO INSTALLATION, VERIFY PRECISE LOCATION OF NEW OR RELOCATED WALL OR CEILING MOUNTED DEVICES WITH ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS.
- 5. COORDINATE ALL SHUT-DOWNS OF EXISTING ELECTRICAL SYSTEMS WITH OWNER A MINIMUM OF SEVEN WORKING DAYS IN ADVANCE.
- ALL SHUT-DOWNS SHALL OCCUR DURING WEEKENDS OR UNOCCUPIED TIMES, INCLUDE ALL PREMIUM TIME CHARGES IN BID. 6. ALL NOISE GENERATING OPERATIONS, INCLUDING CUTTING OF CEILINGS, WALLS AND FLOORS, CORING, DRILLING, ETC. SHALL BE
- SCHEDULED ON WEEKENDS OR BETWEEN 8:00PM AND 7:00AM ON WEEKDAYS. INCLUDE ALL PREMIUM TIME CHARGES IN BID.
- ELECTRICAL CONTRACTOR SHALL CONNECT ALL MECHANICAL EQUIPMENT COMPLETE PER MANUFACTURER'S WIRING DIAGRAMS AND INSTRUCTIONS. COORDINATE WITH MECHANICAL CONTRACTOR AND VERIFY LOCATION, VOLTAGE, AMPS, NO. OF WIRES, AND PROTECTION REQUIREMENTS PRIOR TO ROUGH-IN. CONTACT ENGINEER WITH ANY DISCREPANCIES FROM DESIGN DRAWINGS.
- 8. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO MECHANICAL EQUIPMENT OR OTHER EQUIPMENT WHICH MAY PROPAGATE VIBRATION.
- 9. VERIFY LIGHTING CIRCUIT VOLTAGE (277V-10 OR 120V-10) PRIOR TO ORDERING LIGHTING FIXTURES OR STARTING ROUGH-IN OF BRANCH CIRCUITS. IMMEDIATELY CONTACT ENGINEER WITH ANY DISCREPANCIES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ORDERING THE PROPER VOLTAGE FOR LIGHTING FIXTURES, REGARDLESS OF VOLTAGE SHOWN ON LIGHTING FIXTURE SCHEDULE.
- 10. ALL FLUORESCENT LAMPS THAT WILL NOT BE REUSED SHALL BE DISPOSED OF IN ACCORDANCE WITH EPA STANDARDS, AND WRITTEN EVIDENCE OF PROPER DISPOSAL SHALL BE FURNISHED TO THE OWNER.
- 11. ALL NEW LINEAR FLUORESCENT LAMPS SHALL BE 3500°K, T8 TYPE UNLESS OTHERWISE NOTED.
- 12. ALL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE PHASING REQUIREMENTS OF THE PROJECT. ALL COSTS ASSOCIATED WITH THESE REQUIREMENTS SHALL BE INCLUDED IN THE BID SUBMITTAL.
- 13. <u>DEFINITION:</u> "PROVIDE" FURNISH, INSTALL AND CONNECT COMPLETE.

WALL TYPE LEGEND

INDICATES EXISTING CONSTRUCTION INDICATES DEMOLITION INDICATES NEW CONSTRUCTION

ABBREVIATIONS

- ABOVE COUNTER AT 9" UNLESS OTHERWISE NOTED
- AMP FRAME
- ABOVE FINISHED CEILING
- ABOVE FINISHED FLOOR
- AMP TRIP
- AUTOMATIC TRANSFER SWITCH
- BELOW COUNTER AT 18"AFF UNLESS OTHERWISE NOTED
- BELOW FINISHED CEILING
- CEILING MOUNTED **ELECTRICAL CONTRACTOR**
- EQUIPMENT GROUND
- ELECTRIC WATER COOLER
- GENERAL CONTRACTOR
- GROUND FAULT CIRCUIT INTERRUPTER
- ISOLATED GROUND
- MECHANICAL CONTRACTOR
- MAIN LUGS ONLY
- NATIONAL ELECTRICAL CODE

- NOT IN CONTRACT
- OWNER FURNISHED EQUIPMENT
- TELECOMMUNICATIONS CONTRACTOR
- TEMPERATURE CONTROLS CONTRACTOR VARIABLE FREQUENCY DRIVE
- WEATHERPROOF ENCLOSURE NEMA 4 TYPE
- EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, CONDUIT, ETC. TO REMAIN
- INDICATES EXISTING OUTLET, LIGHTING FIXTURE, CONDUIT, ETC TO BE REMOVED. PROVIDE BLANK COVER FOR OUTLET AND MAINTAIN CIRCUIT CONTINUITY.
- NEW LOCATION OF EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC.
- EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. TO BE REPLACED WITH NEW OF SPECIFIED TYPE
- EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, CONDUIT, ETC. TO BE REMOVED COMPLETE- MAINTAIN CIRCUIT CONTINUITY TO ADJACENT OUTLETS, EXTEND CONDUIT AND WIRING AS REQUIRED.
- EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. TO BE REMOVED AND REINSTALLED AT NEW LOCATION EXTEND CONDUIT AND WIRING AS REQUIRED
- VAMC VETERAN AFFAIRS MEDICAL CENTER

FULLY SPRINKLERED

541-15-203

Building Number

Drawing Number

Dwg.

1-E1

CONSULTANTS:



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ARCHITECT/ENGINEER:

Approved: Project Director

ELECTRICAL LEGEND

Drawing Title

VAMC - WADE PARK 05-08-14 MPL **TWM**

PROVIDE PROCESS LOOP

Project Title

TIE-INS

Office of **Facilities Management**

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

Final Bid Submittal

OR CONSTRUCTION

Date

one eighth inch = one foot

0 4 8 16

